June 24, 2004

Krist, Izzo, Secretary
Board of Public Utilities
Two Gateway Center
Newark, New Jersey 07102

Re: I/M/O Comprehensive Energy Efficiency and
Renewable Energy Resource Analysis
BPU Docket No. EX04040276

Dear Secretary Izzo:

Pursuant to the notice by the BPU of the Clean Energy Council hearings and meetings scheduled for June 29, 2004 for Commercial and Industrial Programs, Public Energy Solutions would like to present the following comments for the record.

Public Energy Solutions (PES) is a New Jersey Energy Services Company that has participated in Clean Energy Programs under our current name and previously as PSEG Energy Technologies – Lighting Division. In addition, I have participated on the Energy Efficiency Committee and several subcommittees's to provide input from my experiences and expertise in lighting programs.

The following comments are specifically related to Commercial and Industrial Programs.

Several changes in the Lighting Program were implemented on March 5, 2004. Some of these changes reduced incentives specifically to Compact Fluorescent

(CFL) fixtures and LED Traffic Signals. Incentives should be used in transforming the market from inefficient to efficient technology and modifying those incentives over time, such that when the market has been transformed, there is no longer a need for incentives. We have not seen any market transformation data that was employed in the decision to lower the CFL and LED incentives. However, our experience has shown a significant decrease in activity in two primary markets served by these incentives since the 3/5/04 program changes.

Compact Fluorescent Lamps

Compact Fluorescent lamps replace incandescent lamps, providing energy savings as well as long term maintenance savings due to their extended life. The 2003 program provided incentives for the replacement of existing incandescent surface mount fixtures with new CFL fixtures. The 2004 program added recessed fixtures and lowered incentive levels. The master metered, multi-tenant low-income and subsidized housing market contains one of the largest inventories of these existing fixture types in NJ. This market requires a high level of incentive support to take action. Our experience has shown that the momentum created in this market under the prior program has slowed significantly since the program change. While the incentives on this measure were reduced an average of 26.5%, material and installation costs have increased over the past 2 years. This program may need to be re-evaluated in order to effect transformation in this under served market.

LED Traffic Signals

LED Traffic Signal retrofit modules replace incandescent technology on a one for one basis, providing up to 95% energy savings, dramatic reductions in maintenance costs and improved traffic safety. Utilized primarily by municipal and state government entities, this technology upgrade requires assistance to implement due to its relative high first cost. PES has considerable project experience in this market. The average incentive reductions of 36%, combined with the elimination of the NJDOT Economic Development funding assistance have led to an almost total drop off in new customer applications. This program may need to be re-evaluated.

Continued technology advancements are creating new lighting systems that, in some instances, can produce significant incremental efficiency gains over high efficiency systems that may have been installed as recently as the past few years. Similar gains have been made in other building system technologies. Additionally, industry experience has shown the absence of some technologies in the program while proving the cost effectiveness of certain energy conservation measures compared to others. Technical Working Groups, specific to each technology discipline, should be established to evaluate the current program offerings. These groups should accurately represent the stakeholders so that fair

and reasonable assessments of current technologies can be provided. Several examples follow.

Super Efficiency T8 / Electronic Systems

The new generation of reduced wattage T8 lamps (28 and 30 watts) and super efficiency T8 Electronic ballasts can replace existing standard T8 / Electronic systems while producing up to 25% additional energy savings. When replacing T12 systems the savings are much higher. No incentive is in place that allows a customer to take their existing earlier generation high efficiency lighting systems to the next level. Neighboring Utilities in New England are currently providing incentives for this technology.

Electronic Dimming Fluorescent Systems

Electronic Dimming Fluorescent Systems operate on several different platforms and can provide dimming ranges as low as 3% or offer stepped-level dimming. These systems can be employed in daylight harvesting and occupancy sensor scenarios or used as stand-alone systems with remote control capability to allow customers to participate in curtailment programs. The high first cost of these systems has proven a barrier in the retrofit market, with the bulk of this technology being employed on new installations. Recent technology advances have allowed for some penetration to the retrofit market, however, without the

ability to communicate with the fixtures on a system-wide basis. While the first costs for these systems remains relatively high, the incentives levels were effectively reduced in the 2004 program by changing the incentive from a per ballast to a per fixture value.

8' Fluorescent Fixture Retrofits

In April of 2003 we submitted comments regarding the cost effectiveness of the current prescriptive incentive for this strategy. Our comments where:

Incentive for 4-lamp 8 foot F96/T12 Fixtures Retrofit to 4-lamp F96/T8:

Both the Prescriptive and Performance lighting programs offer incentives based on the number of fixtures vs. the actual ballasts installed. In the case of existing four lamp 8' F96/T12 fixtures this is inequitable. While 2', 3' and 4' T12 lamps can be replaced with T8 electronic ballast that operate up to four lamps, no four lamp ballast is manufactured for 8' T8 lamps. In order to replace four 8' T12 lamps with T8 equivalents, two 2-lamp electronic ballasts must be installed. As F96/T8 ballasts cost approximately 50% more than their 4' equivalents, this compounds the problem.

We feel this is particularly inequitable given the fact the program will pay an incentive for each individual fixture body in a tandem wired situation, even though only one ballast may be used to operate multiple fixtures. For example, a continuous row of four, 4' strip fixtures, each operating one F32/T8 lamp could be tandem wired with one electronic ballast capable of operating four T8 lamps. Under the current program this retrofit would

qualify for either $80 (prescriptive) or $120 (maximum Performance), while an 8' fixture body would be capped at a $20 or $30 incentive.

We suggest modifying the program guidelines specifically for 8' F96/T8 lamps to pay an incentive based on the number of ballast installed in each fixture vs. the number of fixtures existing or following an approach noted below. It is also suggested that guidelines be implemented for tandem wiring scenarios.

Prescriptive Incentive to Retrofit 8-foot 2-lamp F96/T12 fixtures to 2-lamp F32/T8 and Specular Reflector:

The Prescriptive program currently offers a $20 incentive to retrofit an 8' fixture from two F96/T12 lamps with a magnetic ballast drawing 123 watts to two F96/T8 lamps with an electronic ballast drawing 111 watts. This retro yields only 12 watts of energy savings yet qualifies for a $20 incentive. If measured on an incentive cost per kiloWatt reduced basis, this results in an incentive of $1,666 per kWr.

Conversely, if the same existing fixture was to be retrofitted with two 4' F32/T8 lamps, an electronic ballast and specular reflector retrofit kit such as to allow for the use of two 4' lamps end-to-end in the 8' fixture housing, the energy savings would equal 62 watts. Receiving the same $20 incentive, this results in an incentive cost of $322 per kWr. While this retrofit option yields real energy savings, the program structure does not accurately award for the fact. We recommend eliminating the replacement of existing F96T12 fixtures with F96T8 fixtures as the minimal energy savings provided does not cost justify any incentive.

Modifying the program to incorporate a retrofit to F32T8 lamps with a new reflector would yield an energy reduction of 50% justifying an incentive.

Performance Application Program

The Performance Application Program places a $30/fixture cap on installed technology. We believe this value should be calculated based on a combination of the actual energy a specific project is reducing and the system technology used. Allowing for a higher cap could incent for more efficient designs and create higher savings. An alternate approach would be to offer the lesser of an incentive cap or a payback “buy-down” period as is currently offered by some neighboring utilities in the northeast.

HVAC Controls

The current program does not offer incentives for installing programmable thermostats that can be programmed to reduce HVAC requirements during periods of peak demand. C&I customers with packaged rooftop units are a significant market in NJ. Studies in other regions show the cost effectiveness of employing this technology. Requirements for control capability should include schedule changes or temperature adjustments through the Internet.

Electric Tune Up Program

Many facilities could reduce total energy consumption by performing maintenance to existing electrical panels and equipment. A program could be developed that would provide an incentive to “Tune Up” the electrical system by qualified electricians, and gather data on connected equipment. Energy savings realized through this program would be difficult to quantify, however, data collected on site could be provided to the office of Clean Energy to develop a database of the types of electrical equipment in the market. This data could serve as a source to target and develop upgrade programs based on actual electrical equipment installed in NJ.

Demand Response Program

Significant time, resources and funding have achieved impressive energy reductions throughout the state of New Jersey. However, we still experience the problem of high cost electricity during periods of high demand and areas exist within the State with unhedgeable congestion on transmission lines. A strong need exists to introduce a Peak Load Reduction or Demand Response Program. The program would provide incentives for customers to install measures that reduce peak load. Barriers exist that prohibit small to middle market customer’s form participating in the current ISO curtailment programs. Providing incentives for customers to install the technology necessary to curtail will provide significant

benefits to everyone in the state. Several benefits would include lower energy use during peak periods, maintaining system reliability and lower emissions into the environment. Our experience indicates that most small to mid market C&I customers are not in control of their energy usage as they don't posses the tools necessary. Engaging the customer in these programs would allow them to learn how to manage their energy usage and save where possible or shift times of use for some equipment. The program could incorporate an incentive for installing meters that would verify reductions as implemented.

Possible Pilot Program

To foster market creativity and competition in reducing facilities energy requirements, a program could be created whereby Customers, Contractors or Vendors would provide bids to the Office of Clean Energy to design, market and implement a specific amount of permanent load reduction for a fixed cost. The bid would require submission of the technologies to be employed, markets to be solicited, capability of the bidder to deliver the bid on time and predetermined penalties for failure to deliver. The overall goal of this program would be to develop the most cost effective approach to reducing energy consumption. A Pilot program could be introduced with limited funding to explore the potential of such an approach.

Public Energy Solutions is committed to educating and providing New Jersey businesses with design and implementation of energy efficient technology and systems as demonstrated by our track record. We continue to offer our staff and performance results to the OCE in partnership to provide the maximum benefits these programs offer.

Respectfully Submitted,

Public Energy Solutions

Keith S. Hartman

President